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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Application of Southern California Edison
Company (U 338-E) for Approval of the Results
of Its 2013 Local Capacity Requirements Request
for Offers for the Moorpark Sub-Area.

A.14-11-016
(Filed November 26, 2014)

PHASE 2 OPENING BRIEF OF
SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E)
(PUBLIC VERSION)

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Phase 2 Opening Brief of Southern California Edison Company (U 338-E)
(Public Version)

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Pursuant to Rule 13.11 of the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission” or “CPUC”) and the schedule set forth in the August 18, 2016 Second Assigned Commissioner’s Ruling and Scoping Memo (“Phase 2 Scoping Memo”), Southern California Edison Company (“SCE”) respectfully submits this opening brief.

I.

INTRODUCTION

Very early on in its Opening Testimony,¹ and in its Local Capacity Requirements (“LCR”) Procurement Plan submitted in the Long Term Procurement Plan (“LTPP”) proceeding, before it submitted Application 14-11-016,² SCE highlighted the unique and localized transmission grid issue in the Santa Barbara/Goleta area and the need for resources in the area.

¹ Exhibit SCE-1, SCE’s Opening Testimony, at 6-7.

² Exhibit SCE-10, Track 1 Procurement Plan of Southern California Edison Company Submitted to Energy Division Pursuant to D. 13-02-015, at 15-16; *id.* at 23 (“As also discussed above, generation attached to Goleta Substation will have greater value than at other locations as discussed in Chapter II.”).

In Phase 2 of this proceeding, pursuant to questions raised in Decision (“D.”) 16-05-050 and the Phase 2 Scoping Memo, SCE addressed specific questions raised by the Commission regarding unmet need in the Santa Barbara/Goleta area and the best way to fill that need.

SCE’s Phase 2 testimony has made it clear that it cannot meet the Santa Barbara/Goleta annual peak load in the event both Goleta-Santa Clara 230 kV transmission lines are down.³ This means that if both lines are lost, it would result in service disruption and the potential for rolling blackouts for SCE’s customers in the area because repair and replacement of the transmission towers could take up to several weeks if a natural disaster, such as a landslide or earthquake, occurs.⁴ In this scenario, without Ellwood there would be a 105 MW shortfall beginning in 2018.⁵

As explained in its Phase 2 Opening Testimony, SCE’s integrated mitigation strategy to provide for resiliency⁶ in the Santa Barbara/Goleta area includes: (1) obtaining approval of the Ellwood Refurbishment contract to address both capacity and short circuit duty (“SCD”) constraints; (2) the pursuit of cost-competitive Distributed Energy Resources (“DER”) in the Santa Barbara/Goleta area; and (3) considering the implementation of cost-effective traditional electric system upgrades.⁷

Although Ellwood is only one part of SCE’s mitigation strategy, it is the foundation of the strategy and is essential to addressing the unique issues in the Santa Barbara/Goleta area. Ellwood is crucial because it can meet over half of the shortfall in the area, it is a currently available resource that does not need to be built or go through another regulatory process for approval, it is expected to be available and reliable when it is needed due to the refurbishment, it provides for significant SCD, which is crucial to maintaining safe operation of the electric

³ Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 2-3, 8-10; Exhibit SCE-12C, SCE’s Phase 2 Rebuttal Testimony, at 2.

⁴ Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 2.

⁵ *Id.* at 3.

⁶ Resiliency refers to the ability of the electrical system to respond to an emergency event so that customers maintain service. Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 3.

⁷ Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 3.

system after the loss of the Goleta-Santa Clara transmission lines, and it is cost effective. The other potential solutions to help address the shortfall in the Santa Barbara/Goleta area are longer term with less certainty in terms of availability, cost and the ability to provide for SCD. Therefore, the Commission should approve the Ellwood Refurbishment contract and the in-front-of-the-meter (“IFOM”) energy storage contract because they can meet a large part of the Santa Barbara/Goleta shortfall at a reasonable cost and at the right time.

II.

BACKGROUND AND PROCEDURAL HISTORY

A. The LTPP Track 1 Decision Ordered SCE to Procure Resources in the Moorpark Sub-Area

On February 13, 2013, in the LTPP proceeding, the Commission issued D.13-02-015 (“Track 1 decision”), in which it authorized SCE to procure between 215 to 290 MW of electrical capacity in the Moorpark sub-area of the Big Creek/Ventura local reliability area to meet long-term local capacity requirements by 2021.⁸ The need for additional capacity in the Moorpark sub-area is largely due to the expected retirement of approximately 2,000 MW from once-through cooling (“OTC”) generation facilities in the Moorpark sub-area in compliance with State Water Resources Control Board regulations.⁹

The Track 1 decision also ordered SCE to submit an LCR procurement plan (“LCR Procurement Plan”) to Energy Division explaining how it would conduct its LCR Request for Offers (“RFO”).¹⁰ SCE submitted its LCR Procurement Plan on July 15, 2013.¹¹ The LCR

⁸ D.13-02-015 at 131 (Ordering Paragraph (“OP”) 2).

⁹ *Id.* at 6, 120 (Finding of Fact (“FOF”) 5); California Energy Commission’s Tracking Progress, *Once-Through Cooling Phase-Out* (last updated on February 17, 2015) at 6 (total MW from the retirement of the following OTC plants in the Moorpark sub-area: Mandalay 1,2 and Ormond Beach 1,2) available at http://www.energy.ca.gov/renewables/tracking_progress/documents/once_through_cooling.pdf.

¹⁰ D.13-02-015 at 133-134 (OP 5-7).

¹¹ Exhibit SCE-1C, SCE’s Opening Testimony, at 4.

Procurement Plan included a section highlighting the unique issues in the Santa Barbara/Goleta area stating that SCE would not be able to meet all of the peak load served by the Goleta Substation if an outage occurred on the two Goleta- Santa Clara 230 kV transmission lines, and thus, “[t]here is significant value to the local communities in seeking generation sited in this area.”¹² SCE also expressed that “generation attached to Goleta Substation will have greater value than at other locations” due to the unique issues in the Santa Barbara/Goleta area.¹³

In accordance with the Track 1 decision, Energy Division reviewed SCE’s LCR Procurement Plan and requested that SCE submit a modified LCR Procurement Plan with additional information.¹⁴ SCE submitted its final modified LCR Procurement Plan on August 30, 2013.¹⁵ Energy Division approved SCE’s modified LCR Procurement Plan on September 4, 2013.¹⁶

To meet the need identified in the Track 1 decision, on September 12, 2013, SCE issued a RFO seeking new LCR resources, including Preferred Resources,¹⁷ (Energy Efficiency (“EE”), Demand Response (“DR”), renewable resources, Combined Heat and Power (“CHP”) resources, and Distributed Generation (“DG”)), Energy Storage resources, and Natural Gas-Fired Generation (“GFG”).

¹² Exhibit SCE-10, Track 1 Procurement Plan of Southern California Edison Company Submitted to Energy Division Pursuant to D. 13-02-015, at 15-16.

¹³ *Id.* at 23.

¹⁴ Exhibit SCE-1C, SCE’s Opening Testimony, at 4.

¹⁵ *Id.*

¹⁶ *Id.* SCE’s LCR Procurement Plan was entered into the record on May 29, 2015 as Exhibit SCE-10.

¹⁷ Exhibit SCE-1C, SCE’s Opening Testimony, at 1. Preferred Resources are defined in the State’s Energy Action Plan II, at page 2, as follows: “The loading order identifies energy efficiency and demand response as the State’s preferred means of meeting growing energy needs. After cost-effective [energy] efficiency and demand response, we rely on renewable sources of power and distributed generation, such as combined heat and power applications. To the extent [energy] efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, we support clean and efficient fossil-fired generation. Concurrently, the bulk electricity transmission grid and distribution facility infrastructure must be improved to support growing demand centers and the interconnection of new generation, both on the utility and customer side of the meter.”

B. SCE Filed an Application Seeking Approval of the Resources Procured Through Its LCR RFO for the Moorpark Sub-Area

The Track 1 decision also ordered SCE to file an application for approval of all contracts entered into as a result of the procurement process for new capacity in the Moorpark sub-area.¹⁸ On November 26, 2014, SCE filed an Application for approval of the results of its 2013 LCR RFO for the Moorpark sub-area seeking approval of 11 contracts.¹⁹ In its Opening Testimony in support of its Application, SCE again discussed the unique issues in the Santa Barbara/Goleta area, reiterating that SCE would not be able to meet peak load in the area in the event of the loss of the Goleta-Santa Clara 230 kV transmission lines.²⁰ As a result, SCE stated a preference for LCR resources in the Goleta service area and indicated that bids would be accepted in the Goleta service area for delivery as early as 2016.

In its Application, one of the contracts SCE sought approval of was the Ellwood Refurbishment contract that was packaged with a small 0.5 MW IFOM energy storage offer. The Ellwood Generating Station and proposed IFOM energy storage project would be located in the Goleta service area. The Ellwood Refurbishment contract is a 10-year tolling agreement with NRG California South, LP (“NRG”) for capacity from the existing 54 MW Ellwood Generating Station, which NRG will refurbish (without any change in capacity) to provide for an extended 30-year design life for the facility.²¹ Ellwood was included as an existing resource in the California Independent System Operator (“CAISO”) study that served as the foundation of D.13-02-015 and, in that study, it was assumed to continue operating. Therefore, the Ellwood contract is not an incremental resource and does not count toward SCE’s LCR procurement requirements

¹⁸ D.13-02-015 at 135 (OP 11).

¹⁹ A.14-11-016, SCE’s Application for Approval of the Results of Its 2013 Local Capacity Requirements Request for Offers for the Moorpark Sub-Area, filed November 26, 2014.

²⁰ Exhibit SCE-1, SCE’s Opening Testimony, at 6-7.

²¹ *Id.* at 57.

for the Moorpark sub-area, although, the linked 0.5 MW IFOM energy storage contract would count towards SCE's LCR procurement target.²²

C. The Commission Partially Approved SCE's Application, Deferring Consideration of the Ellwood Refurbishment Contract and the Linked IFOM ES Contract

D.16-05-050, approving, in part, SCE's application for approval of the results of its LCR RFO for the Moorpark sub-area, found that although Ellwood is not an incremental resource, "it is appropriate to consider the Ellwood contract in this proceeding."²³ D.16-05-050 also determined that, "[a]lthough it may be incomplete, there is already a record in this proceeding regarding the reliability circumstances in the Moorpark and Goleta areas," and thus, "this proceeding is the most efficient procedural venue to establish if there is a separate local reliability need in the Goleta area...."²⁴ Based on these findings, the Commission deferred consideration of the Ellwood Refurbishment contract and the linked 0.5 MW IFOM energy storage contract, both located in the Goleta area of Santa Barbara County, to a separate decision in the same docket that addresses the unique resiliency needs in the Santa Barbara/Goleta area and the best way to meet those needs.²⁵

²² *Id.* at 3 fn. 1, 57.

²³ D.16-05-050 at 30.

²⁴ *Id.* at 31.

²⁵ *Id.* at 38 (Conclusion of Law ("COL") 8).

III.

PURSUANT TO D.16-05-050 IT IS APPROPRIATE TO CONSIDER THE APPROVAL OF THE ELLWOOD REFURBISHMENT CONTRACT IN THIS PROCEEDING

In D.16-05-050, the Commission found the following when determining whether it is appropriate for the Commission to consider the Ellwood Refurbishment contract in this proceeding:²⁶

We find that it is appropriate to consider the Ellwood contract in this proceeding. SCE clearly stated in its approved procurement plan that it would evaluate reliability issues in Goleta. *Further, parties have litigated SCE's proposal for the Ellwood refurbishment contract; there is no value in starting anew and duplicating the efforts already undertaken by the parties.* However, the record in this proceeding does not appear to be fully developed enough to decide whether to approve the Ellwood contract at this time. To determine if the Ellwood contract is reasonable, it is necessary to determine if there is a reliability need that it would meet.²⁷

The Commission also determined in Conclusion of Law 8 that the Ellwood Refurbishment contract “should be considered in a subsequent decision in this docket”²⁸ and in Ordering Paragraph 1 that the Ellwood Refurbishment contract and linked IFOM energy storage contract “will be considered in a subsequent decision in this docket.”²⁹ Thus, based on the Commission’s conclusion and order, it is clear that the Ellwood Refurbishment contract “should be considered” in this proceeding.³⁰

Moreover, as a result of the Commission’s conclusion and order that the Ellwood Refurbishment contract should be considered in this proceeding, the Commission initiated Phase

²⁶ *Id.* at 28 (“The Scoping Memo in this proceeding includes the following issue for consideration: Is the 54 MW Ellwood Refurbishment project appropriate for the Commission to consider in this proceeding and, if so, is the contract reasonable?”).

²⁷ *Id.* at 30 (emphasis added).

²⁸ *Id.* at 38 (COL 8).

²⁹ *Id.* at 39 (OP 1).

³⁰ *Id.* at 38 (COL 8).

2 of this proceeding “to determine if the Ellwood contract is reasonable.”³¹ As identified in the Phase 2 Scoping Memo:

The issues to be determined in Phase 2 are as follows:

1. Is the 54 MW Ellwood Refurbishment contract reasonable?
2. Is the contract with NRG California South LP, for a 0.5 MW storage project, reasonable?³²

The issues scoped for Phase 2 of this proceeding did *not* include one of the original issues in this proceeding, “Is the 54 MW Ellwood Refurbishment project appropriate for the Commission to consider in this proceeding . . . ?”³³ because the issue of the appropriate venue was resolved in D.16-05-050, as explained above.

In D.16-05-050, the Commission also decided that “[t]o determine if the Ellwood contract is reasonable, it is necessary to determine if there is a reliability need that it would meet.”³⁴ Therefore, pursuant to D.16-05-050 and the Phase 2 Scoping Memo, the purpose of Phase 2 of this proceeding is not to relitigate whether it is proper to consider the Ellwood Refurbishment contract in this proceeding, but to determine the reasonableness of the Ellwood Refurbishment contract by determining if the resource is the “best way”³⁵ to help meet a need in the Santa Barbara/Goleta area. Thus, the Ellwood Refurbishment contract should be considered in this proceeding and approved as reasonable for the reasons discussed below.

³¹ *Id.* at 28.

³² Phase 2 Scoping Memo at 4.

³³ Assigned Commissioner’s Ruling and Scoping Memo, dated March 13, 2015, at 5.

³⁴ D.16-05-050 at 28.

³⁵ Phase 2 Scoping Memo at 4.

IV.

THE COMMISSION SHOULD APPROVE THE ELLWOOD REFURBISHMENT AND LINKED IN-FRONT-OF-THE-METER ENERGY STORAGE CONTRACTS ³⁶

A. Ellwood Helps Meet a Need in the Santa Barbara/Goleta Area

As the record of evidence establishes, there is a unique and localized transmission grid issue in the Santa Barbara/Goleta area that the 54 MW Ellwood and the 0.5 MW IFOM energy storage project will help alleviate, supporting the reasonableness of the contracts.³⁷

The Santa Barbara/Goleta area is a unique geographic area located in the most westerly part of SCE's service territory.³⁸ This area is relatively isolated as it is bound by the Pacific Ocean to the south and west, and the Los Padres National Forest to the north and east.³⁹ See Figure IV-1 for a diagram of the area.

³⁶ SCE has submitted prior testimony and briefing explaining the value of the Ellwood contract and why it should be approved, and incorporates that testimony and briefing herein by this reference. *See* Exhibit SCE-1, SCE's Opening Testimony, at 43, 46-47; Exhibit SCE-2C, Appendix D: Independent Evaluator Report, at D-68 – D-69, D-71; Exhibit SCE-7, SCE's Rebuttal Testimony at 6-9; SCE Opening Brief at 11-13; SCE Reply Brief at 9-12, 18-23.

³⁷ Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 1-3. SCE's Opening Testimony also explained the unique issues facing the Santa Barbara/Goleta area. Exhibit SCE-1, SCE's Opening Testimony, at 6-7. The record in this proceeding includes various arguments related to, and a substantial amount of information on, the reasonableness of the Ellwood Refurbishment contract, and those arguments should not be relitigated in Phase 2. *See* Exhibit SCE-1, SCE's Opening Testimony, at 43, 46-47; Exhibit SCE-2C, Appendix D: Independent Evaluator Report, at D-68 – D-69, D-71; Exhibit SCE-7, SCE's Rebuttal Testimony at 6-9; SCE Opening Brief at 11-13; SCE Reply Brief at 9-12, 18-23.

³⁸ Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 7.

³⁹ *Id.*

Figure IV-1
Goleta-Santa Clara Transmission Lines



The Goleta 230/66kV Substation serves the load in Santa Barbara/Goleta area and is connected to the transmission system by the two Goleta-Santa Clara 230kV transmission lines.⁴⁰ These two transmission lines are the only points of connection between the Goleta 230/66 kV Substation and the transmission grid, and thus, the sole source of transmission service for the Santa Barbara/Goleta area.⁴¹ The two Goleta-Santa Clara 230 kV transmission lines are on the same set of transmission towers, which increases the potential for a common-mode failure of both lines.⁴² The concern about losing the Goleta-Santa Clara 230 kV transmission lines is largely due to the towers being located on rugged mountainous terrain where landslides caused by heavy rainfall (*e.g.*, 1997-1998 El Niño conditions) and frequent fires (*e.g.*, 2007 Zaca, 2008 Gap, 2008 Tea and 2009 Jesusita fires) create a heightened risk to the transmission lines and towers.⁴³ Due to the rugged terrain, repair and replacement of transmission lines and

⁴⁰ *Id.*

⁴¹ *Id.* at 1-2.

⁴² *Id.* at 2.

⁴³ *Id.* The loss of the Goleta-Santa Clara 230 kV transmission lines is also referred to as an N-2 contingency. The N-2 of the Goleta-Santa Clara 230 kV lines is compliant with the North American

transmission towers could take up to several weeks if a natural disaster, such as a landslide or earthquake, occurs.⁴⁴

In the event of an outage of the Goleta-Santa Clara 230 kV transmission lines, approximately 85,000 customers in the Santa Barbara/Goleta area would lose power until emergency electrical back-up power could be delivered to the area.⁴⁵ Service disruption could initially affect all customers, including critical services (*e.g.*, hospitals, schools, and street lights).⁴⁶ Emergency back-up power would be delivered via three existing subtransmission tie lines from the Santa Clara 66 kV subtransmission system.⁴⁷ The Santa Clara 66 kV subtransmission system normally serves western Ventura County but can also act as a partial back-up that is capable of replacing a portion of the capacity provided by the Goleta-Santa Clara 230 kV transmission lines.⁴⁸ If the Goleta-Santa Clara 230 kV transmission lines are not able to be reenergized, SCE's system operators would begin utilizing the 66 kV lines to pick up load in the Santa Barbara/Goleta area within an hour.⁴⁹

However, the existing 66 kV facilities do not have adequate capacity to serve the entire 285 MW forecasted annual peak load nor provide adequate SCD in the Santa Barbara/Goleta area if both Goleta-Santa Clara 230 kV transmission lines are lost.⁵⁰ The 66 kV facilities currently have sufficient capacity to reroute 100 MW to the Santa Barbara/Goleta area.⁵¹ A planned upgrade of the 66 kV subtransmission system, the Santa Barbara County Reliability

Electric Reliability Corporation ("NERC") Reliability Standard TPL-001-4, which allows customer load to be dropped without a stated timeframe for restoration. *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.* at 9.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.* at 9-10. The projected load was based on SCE's 2016 Transmission Substation Plan ("TSP") load forecast –A local desalination plant and other developments contribute to the projected peak load forecast. *See* Exhibit SCE-14, Southern California Edison Company's 2016 Transmission Substation Plan, Goleta A-Bank Load Forecast.

⁵¹ *Id.* at 10.

Project (“SBCRP”), which is scheduled to be completed in August 2018, will increase this capacity from 100 MW to 180 MW.⁵² However, even rerouting 180 MW through the 66 kV system would not allow for all Santa Barbara/Goleta annual peak load to be met in the event both Goleta-Santa Clara 230 kV transmission lines are down; there would still be a 105 MW shortfall beginning in 2018,⁵³ upon expiration of the current Ellwood contract.⁵⁴

1. Ellwood is Critical in the Event of the Loss of the Goleta-Santa Clara 230kV Transmission Lines

As explained in its Phase 2 Opening Testimony, SCE’s integrated mitigation strategy to provide for resiliency⁵⁵ in the Santa Barbara/Goleta area includes: (1) obtaining approval of the Ellwood Refurbishment contract to address both capacity and SCD constraints; (2) the pursuit of cost-competitive DER in the Santa Barbara/Goleta area; and (3) considering the implementation of cost-effective traditional electric system upgrades.⁵⁶

Although Ellwood is only one part of SCE’s mitigation strategy, it is the foundation of the strategy and is essential to addressing the unique issues in the Santa Barbara/Goleta area. First, Ellwood is an existing unit that, upon approval of the Ellwood Refurbishment contract, will be immediately available to meet the needs in the area in 2018, and upon completion of its refurbishment will be reliably available for ten years under the contract.

Second, as an existing resource, Ellwood ensures that over half of the 105 MW shortfall in the area will be met when it is needed in 2018. The other components of SCE’s

⁵² *Id.* (citing Exhibit SCE-13, Excerpt from Proponent’s Environmental Assessment Santa Barbara County Reliability Project at 1-5).

⁵³ *Id.* The projected peak load served by the Goleta Substation was utilized to determine the MW shortfall.

⁵⁴ *Id.* at 3 fn. 7. SCE is currently under contract with NRG to receive 54 MW of capacity from Ellwood through May 2018. The Commercial Operation Date of the Ellwood Refurbishment contract is June 2018. *Id.*

⁵⁵ *Id.* at 3. Resiliency refers to the ability of the electrical system to respond to an emergency event so that customers maintain service. *Id.*

⁵⁶ *Id.*

mitigation strategy, the pursuit of DERs and potential electric system upgrades, will most likely not be available in 2018 and do not provide as much certainty as Ellwood. For example, the development of traditional electric system upgrades, like new lines, require licensing, which is a long-term proposition well beyond 2018.⁵⁷ In addition, there is uncertainty on what DER offers SCE will receive through its DER solicitation for the Santa Barbara/Goleta area, the cost of those offers, their electrical characteristics, when the projects can be online, etc.⁵⁸ Ellwood provides the certainty, at a reasonable cost, that is needed in the area while SCE thoughtfully pursues and considers the other elements of its mitigation strategy.⁵⁹

Moreover, Ellwood will also allow SCE time to evaluate how effective any DERs procured in the area are at addressing the area's unique needs.⁶⁰ In addition to being assessed as part of SCE's solicitation process, the MW capacity, SCD contribution and location of each DER procured will determine each resource's ability to address the area need, and the efficacy of these DERs must be assessed over time, accounting for changes in the demand, before determining if a capacity or SCD deficit remains.⁶¹ This is a prudent approach to ensure safe and reliable service at reasonable cost.⁶²

Third, Ellwood currently provides SCD in the area in the event of the loss of the Goleta-Santa Clara transmission lines, making it essential to supporting the unique needs in the Santa Barbara/Goleta area.⁶³ Moreover, Ellwood is ideally located to provide SCD to the western part of the Santa Barbara/Goleta area, where SCD would be especially needed in the event of the loss of the Goleta-Santa Clara transmission lines because the 66 kV lines to Santa

⁵⁷ See SCE, Chinn, Transcript, Vol. 5 at 890:6-28 – 891:1-11 (November 1, 2016).

⁵⁸ Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 6-7.

⁵⁹ *Id.* at 7.

⁶⁰ *Id.*

⁶¹ *Id.*; see also SCE, Chinn, Transcript, Vol. 5 at 866:9-27 (November 1, 2016).

⁶² Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 7.

⁶³ Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 12; Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 7.

Clara will primarily provide SCD to the eastern part of the area.⁶⁴ If Ellwood is not approved, in the event of the loss of the Goleta-Santa Clara transmission lines, the SCD contribution from only the 66 kV tie lines from Santa Clara would result in very low SCD and create a public safety hazard when faults occur on the system, as discussed below.⁶⁵

a) **Ellwood Provides Short Circuit Duty, and Short Circuit Duty is Crucial to Maintaining Safe Operation of the Electric System After the Loss of the Goleta-Santa Clara Transmission Lines**

It is in the public interest for SCE to provide safe and reliable electric service by maintaining appropriate levels of SCD⁶⁶ after the loss of the Goleta-Santa Clara 230 kV transmission lines, which Ellwood helps to provide.⁶⁷ SCD is the amount of electric current (also known as fault current) observed throughout the system in the event of a fault.⁶⁸ In general, a fault “means that there is some sort of contact between the conductor and [the] ground somewhere.”⁶⁹ A downed power line or trees falling into the lines are examples of faults.⁷⁰ For example, if a car hits a pole and brings down a 66 kV line onto the ground, this becomes an immediate risk to public safety because an energized line can electrify nearby conductive

⁶⁴ SCE, Chinn, Transcript, Vol. 5 at 804:23-28 – 805:1-10 (November 1, 2016) (“[O]nce we lose the transmission lines, we’re left with two sources, one is Ellwood and another one is 66 kV lines. Carpinteria, Goleta, Santa Barbara; those are kind of stretched along the coast. So the 66 kV lines that tie back to Santa Clara is going to provide the source where -- kind of the, I guess, eastern area. And Goleta happens to be located kind of in the more westerly part of the system and will provide short circuit duty support on the west side of the system. So it does compliment each other in that the 66 can provide it in one location and short circuit -- Ellwood provides it in another location.”).

⁶⁵ Exhibit SCE-12C, SCE’s Phase 2 Rebuttal Testimony, at 4; *see also* SCE, Chinn, Transcript, Vol. 5 at 804:23-28 – 805:1-10, 889:5-22 (November 1, 2016).

⁶⁶ Exhibit SCE-12C, SCE’s Phase 2 Rebuttal Testimony, at 3-4. In November 2015, during the development of El Niño preparations for early 2016 in which there was a greater focus on maintaining system operability without the Goleta-Santa Clara transmission lines, SCE first determined that SCD would be an issue following the loss of the transmission lines. Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 10 fn 25.

⁶⁷ SCE, Chinn, Transcript, Vol. 5 at 804:23-28 – 805:1-10, 889:5-22 (November 1, 2016).

⁶⁸ Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 10.

⁶⁹ SCE, Chinn, Transcript, Vol. 5 at 791:15-17 (November 1, 2016).

⁷⁰ *See id.* at 791:14-15, 25.

material such as cars, water pipes, and water on the ground.⁷¹ Although SCE has specialized equipment to automatically detect faults and de-energize the line, low SCD can allow hazards, such as downed power lines, to remain active for a longer period because when there is low SCD, there is less of a distinction between normal and fault currents, requiring longer time for protective equipment to be able to detect the fault and automatically shut down these lines.⁷² This is because protective equipment looks for spikes in current to recognize that a fault has occurred and based on the magnitude and direction of the fault current which are the closest breakers to open to clear the fault.⁷³ Adequate resources, such as spinning generation or transmission, must be available to raise the current to a high enough level for fault detection, which is the role of SCD.⁷⁴ This is why low SCD would result in SCE taking longer to clear the fault by de-energizing the line.⁷⁵ The risk of an electrocution in the event of a fault increases in proportion to the length of time required to clear the fault.⁷⁶

SCD is primarily supplied by two sources: (1) transmission/sub-transmission lines, and (2) conventional synchronous generation,⁷⁷ such as the existing Ellwood Generating Station. In the event of the loss of the Goleta-Santa Clara 230 kV transmission lines, a major source of SCD is removed and overall SCD in the Santa Barbara/Goleta area is reduced.⁷⁸ If, in addition to an outage on the Goleta-Santa Clara transmission lines, Ellwood is

⁷¹ Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 4.

⁷² *Id.*

⁷³ See Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 10; SCE, Chinn, Transcript, Vol. 5 at 799:12-21 (November 1, 2016).

⁷⁴ Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 11.

⁷⁵ *Id.* at 10.

⁷⁶ Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 4.

⁷⁷ Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 11. Other types of generation, namely asynchronous generation (*i.e.*, inverter-based generation), are capable of supplying SCD. However, asynchronous generation is not as effective as synchronous generation at supplying SCD. Based on recent data provided by generation owners that desire to interconnect to SCE's system, synchronous generation provides on average three times or more SCD as compared to asynchronous generation on a per unit basis. For example, a synchronous machine that produces one amp in normal operation will produce three amps during a fault. An asynchronous machine that produces one amp in normal operation will produce one amp during a fault. *Id.*

⁷⁸ *Id.* at 10.

not available, the only resource left to provide SCD would be the local 66kV lines.⁷⁹ In this scenario, SCD is reduced even further resulting in a situation in which “the [fault] clearing time could be many, many seconds,” and it “would vary depending on how close [the fault is] to the 66 kV lines.”⁸⁰ “Having a system which is unable to clear faults...[is] an immediate issue to...public safety[,] and having a very slow or non-clearing of faults would jeopardize the public.”⁸¹ Thus, conventional synchronous generation, such as Ellwood, can more efficiently supply adequate SCD to quickly detect and isolate faults.⁸² This will facilitate safe operation of the electric system after the loss of the Goleta – Santa Clara 230 kV lines.⁸³

B. The Ellwood Refurbishment and IFOM Energy Storage Contracts are Cost Effective and Reasonable

The Ellwood Refurbishment and IFOM energy storage contracts are reasonable, cost effective, and provide substantial value. The [REDACTED] [REDACTED]⁸⁴ in the LCR RFO for the Moorpark sub-area, representing a net present value (“NPV”) of [REDACTED] [REDACTED]⁸⁵ Moreover, the Independent Evaluator agreed that the costs associated with the Ellwood Refurbishment offer are [REDACTED] [REDACTED]⁸⁶ The next best Moorpark sub-area GFG offer was the [REDACTED] [REDACTED], which is an incremental resource, with a NPV of approximately [REDACTED] [REDACTED] which the Commission recently approved in D.16-05-050.⁸⁷ In the absence of the Ellwood refurbishment, the next best GFG offer in the Goleta area had an approximate NPV

⁷⁹ See SCE, Chinn, Transcript, Vol. 5 at 799:1-8, 803:10-16 (November 1, 2016).

⁸⁰ *Id.* at 799:2-3, 5-6.

⁸¹ *Id.* at 798:14-18.

⁸² Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 11.

⁸³ *Id.*

⁸⁴ Exhibit SCE-2C, Appendix D: Independent Evaluator Report, at D-68; *see also id.* at D-73, D-78.

⁸⁵ Exhibit CO-5C, SCE’s Workpapers, at 140.

⁸⁶ Exhibit SCE-2C, Appendix D: Independent Evaluator Report, at D-71.

⁸⁷ Exhibit SCE-11C, SCE’s Phase 2 Opening Testimony, at 15.

of [REDACTED]

[REDACTED]⁸⁸ Thus, in terms of cost competitiveness, there is no current opportunity for new GFG resources to provide greater value than the Ellwood Refurbishment and linked IFOM energy storage contracts. Procuring a new GFG resource in the Santa Barbara/Goleta area would not be expected to be cost competitive when an existing resource, like Ellwood, is available to be refurbished. With regard to the IFOM energy storage contract, in the LCR RFO, aside from the Ellwood energy storage offer, the next best storage offer located in Goleta was priced at [REDACTED] kW-month and [REDACTED]⁸⁹

The only existing evidence of pricing for Santa Barbara/Goleta area energy storage projects is the offers received in SCE's LCR RFO.⁹⁰ Moreover, SCE's quantitative analysis concluded that the combined Ellwood refurbishment and energy storage offer was significantly more cost-competitive than any other LCR RFO offer that could address the resiliency need and additional LCR needs in the Moorpark sub-area.⁹¹ Accordingly, the Commission should approve the Ellwood Refurbishment and linked IFOM energy storage contracts.

Another important consideration in support of Ellwood is its limited expected operation. Under the Ellwood Refurbishment contract, SCE cannot dispatch the facility for more than [REDACTED] hours in a year.⁹² The annual run hour limitation equates to an approximate [REDACTED] capacity factor.⁹³ Essentially, Ellwood would only operate to provide reliability services and at times of high prices or during a reliability event.⁹⁴ The limited need to operate does not warrant the development of a new GFG resource.⁹⁵

⁸⁸ *Id.* [REDACTED]. *Id.* [REDACTED].

⁸⁹ *Id.* (citing Exhibit CO-05C, SCE's Workpapers, at 164-166).

⁹⁰ Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 11.

⁹¹ *Id.* at 11-12 (citing Exhibit CO-05C, SCE's Workpapers, at 164-166).

⁹² Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 15-16.

⁹³ *Id.* at 16.

⁹⁴ *Id.*

⁹⁵ *Id.*

1. If Approved, the Ellwood Refurbishment and Linked IFOM Energy Storage Contracts Should Receive Cost Allocation Mechanism Treatment

Recovery of the Ellwood Refurbishment and linked IFOM energy storage contract costs should be through SCE's cost allocation mechanism ("CAM") treatment because the refurbishment not only enhances the grid for all customers, but the resources would contribute to meeting local reliability needs for the benefit of all customers in SCE's distribution service area.

The CAM has been developed and refined through a series of Commission decisions⁹⁶ to address instances where SCE has procured resources to meet identified system needs. With this well-established precedent of using CAM to allocate the costs of resources to all benefitting customers, SCE proposes CAM for the Ellwood Refurbishment and linked IFOM energy storage contracts cost recovery. Thus, consistent with prior CAM allocations, all costs and benefits of the Ellwood Refurbishment and linked IFOM energy storage contracts should be allocated to all benefitting customers through the New System Generation rate component.⁹⁷

V.

THE COMMISSION SHOULD APPROVE A SOLICITATION TO IDENTIFY THE ABILITY OF DISTRIUTED ENERGY RESOURCES TO COST EFFECTIVELY ADDRESS THE RESILIENCY NEED IN THE SANTA BARBARA/GOLETA AREA

Based on the parties' Phase 2 testimony,⁹⁸ if the Commission determines that need has been established in the Santa Barbara/Goleta area, it appears that there is general agreement that an RFO should be issued to identify resources to help address the shortfall in the Santa Barbara/Goleta area. Consistent with SCE's integrated mitigation strategy, SCE plans to launch one or more solicitations to potentially acquire a portfolio of cost effective DERs that will help

⁹⁶ See D.14-03-004 at 120.

⁹⁷ See Exhibit SCE-1C, SCE's Opening Testimony, at 60, 62-63, 67; D.15-11-041 at 30-32, 38 (COL 12), 39 (OP 2).

⁹⁸ ORA Phase 2 Testimony at 5; WBA Phase 2 Testimony at 12.

address the resiliency need in the Santa Barbara/Goleta area.⁹⁹ Following receipt of bids, the specific Santa Barbara/Goleta area need will be re-evaluated to account for any changes in the demand forecast.¹⁰⁰ Bids would then be evaluated against traditional grid upgrades so that SCE can pursue a robust and cost-efficient resiliency solution in the Santa Barbara/Goleta area.¹⁰¹

Although SCE plans to issue a DER solicitation for the Santa Barbara/Goleta area, the resources, if any, procured through that solicitation will likely not be online for at least a couple of years,¹⁰² and as SCE has explained, there is an immediate need in the area, especially for resources like Ellwood that can address the SCD issues. Moreover, a solicitation may not result in enough cost-effective offers or reliable DER resources to meet the needs in the area. As such, it remains prudent for the Commission to approve the Ellwood Refurbishment and linked IFOM energy storage contracts as the first step towards addressing the resiliency issues in the Santa Barbara/Goleta area.

VI.

CONCLUSION

For all of the foregoing reasons, the Commission should approve the Ellwood Refurbishment contract and linked IFOM energy storage contract, and should authorize CAM treatment for the Ellwood Refurbishment and IFOM energy storage contracts.

⁹⁹ Exhibit SCE-11C, SCE's Phase 2 Opening Testimony, at 14. If DERs are procured through a RFO, SCE will seek Commission approval of those RFO results. Pending the Commission's findings in the decision on the Phase 2 issues, SCE may submit any RFO results for approval through this proceeding.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² Exhibit SCE-12C, SCE's Phase 2 Rebuttal Testimony, at 9.

Respectfully submitted,

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